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The impact of Conditional Cash Transfer Programs on educational outcomes beyond school attendance. The case of the AUH in Argentina*

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Abstract

In this paper we estimate the impact on educational outcomes beyond school attendance of the Universal Child Allowance (AUH), a massive conditional cash transfer program targeted at young children of unemployed and informal workers launched in Argentina in late 2009. Evidence from previous works suggests that the AUH has had a significant positive impact on attendance rates, but concentrated on boys in upper-secondary school. In this paper, we study the effects on other educational outcomes: intra-year dropout rates and primary school completion rates. The analysis highlights heterogeneous effects across age groups and gender. In particular, the AUH may be held responsible for increasing intra-year continuity rates of eligible girls aged 12 to 14 (almost 4 p.p.) and 15 to 17 (7 p.p.) while no effects were found for children aged 6 to 11. The program seems to have also increased the probability of graduating from primary school of over-age eligible children (1.4 p.p. for boys aged 12 to 14, almost 3 p.p. for girls in that age range and 2 p.p. for boys in the 15-17 age group).

JEL Code: I2, I3

Keywords: conditional cash transfers, education, schooling, Argentina, AUH.

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1. Introduction

The vast majority of social protection schemes in Latin America are based on Conditional Cash Transfer programs (CCTs). CCTs consist on monetary transfers usually aimed at vulnerable children and conditioned upon the fulfillment of certain education and health requirements. One of the main aims of such programs is to encourage the accumulation of human capital and therefore contribute to the breakdown of the intergenerational transmission of poverty. In this way, CCTs articulate short and long term objectives: on the one hand, monetary transfers seek economic protection; on the other hand, conditionalities pursue social promotion (Fiszbein et al., 2009).

The very design of CCTs implies that these programs may have an impact on educational outcomes through different channels. Firstly, transfers enlarge the budget of poor families, which could lead to an increase in demand for different goods and services, including education services, the so called 'pure income' effect. On the other, conditionalities impose an additional incentive to consume education (and health) to the extent that beneficiaries perceive that there is some risk or cost for noncompliance. This latter effect has been reported in the literature as the 'price' effect (Fiszbein et al., 2009).

The impact of CCTs on different educational outcomes has been extensively studied. Beyond the heterogeneity of the findings, programs have had positive and significant impacts on school access indicators, e.g. enrollment and attendance rates, while evidence on the effects on other educational outcomes is scarcer (Saavedra and García, 2017).

CCTs have mainly spread throughout Latin America: *Oportunidades* in Mexico, *Bolsa Família* in Brazil, *Familias en Acción* in Colombia, *Chile Solidario* in Chile, *Tekopora* in Paraguay, *Superémonos* in Costa Rica, *Bono de Desarrollo Humano* in Ecuador and *PANES* in Uruguay, among others. In Argentina, the *Asignación Universal por Hijo* (AUH) was implemented in late 2009. Beyond certain specificities, this program was designed as a CCT focused on children of either unemployed or informal workers. The beneficiaries receive 80% of the transfers on a monthly basis, while the remaining 20% is transferred annually upon fulfillment of health controls and school attendance. The AUH represents the largest social program in Argentina: it benefits over 3.7 million children across the country while each transfer equals almost 15% of minimum wage (ANSES, 2017). This implies that for a typical poor family with 3 children the AUH may represent up to a 50% increase in household income.

Edo, Marchionni and Garganta (2017) show that the AUH has had a positive and significant impact on school attendance rates among eligible children. This effect, however, seems to be concentrated on those aged 15 through 17. Furthermore, it appears to be restricted only to boys. For this particular group (boys aged 15 to 17) the program may be held responsible for increasing the probability of attending school by more than 5 percentage points. The program, however, has had virtually no impact on the probability of attendance of younger children: the magnitude of the effect for those aged 12 to 14 is less than one percentage point (0.8) and for those 6 to 11 is even lower (0.4 p.p.). In both age ranges, all of the effect is once again concentrated among boys. Attendance rates of girls across all age ranges do not seem to have been improved by the AUH at all. These heterogeneities seem to be driven by differences in baseline levels of attendance: in line with international evidence, the AUH seems to have had larger effects among those with lower initial levels of school attendance. This is the case for boys aged 15 to 17, for whom the opportunity cost of attending school is highest.

In this paper we aim to address three core issues. Firstly, we assess whether the AUH has had an effect on educational outcomes beyond attendance rates. Secondly, we explore whether these results have also been led by the eldest eligible children (15 to 17 years old) -as was the case for the documented increase in attendance rates- or whether other age groups, namely those aged 6 to 11 and 12 to 14, may have benefitted from the AUH to a larger extent in other educational outcomes. Thirdly, and most importantly, we evaluate whether these alternative educational outcomes have also remained restricted to boys or whether girls have been able to benefit from the AUH in educational dimensions other than attendance rates. We focus the analysis on two educational outcomes: (i) intra-year continuity rates and (ii) primary school completion rates.[1] The first outcome aims at assessing whether attendance is sustained throughout the school year. The latter, instead, points at evaluating whether sustained attendance in turn leads to higher school completion rates.

Given the non-random assignment of the program as well as the absence of information for beneficiaries before the intervention, we apply a difference-in-difference strategy based on data on the eligible and non-eligible population available from the Argentinean Permanent Household Survey (EPH) carried out by the National Statistics Office (INDEC). Our estimates indicate that the AUH seems to be responsible for positive impacts in educational results beyond school attendance, for age groups other than 15 through 17 and for girls as well for boys. In particular, the AUH may be held responsible for increasing intra-year continuity rates of eligible girls: almost 4 percentage points for those aged 12 to 14 and 7 percentage points for the eldest (15 to 17 years old). No effects were found for eligible boys and for younger children (6 to 11 years old) irrespective of gender. Regarding primary school completion rates, a mild increase for those aged 12 through 14 may be attributed to the AUH (1.4 percentage points for eligible boys and almost 3 percentage points for eligible girls). Instead, only eligible boys aged 15 through 17 show an improvement in primary school completion rates that may be adjudicated to the AUH (2 percentage points). These results hold across different specifications and robustness analysis.

This work contributes to the growing literature on the evaluation of CCTs. First of all, we provide new evidence on the effects of this kind of programs on educational outcomes beyond school attendance. In particular, we explore whether the AUH reduced intra-year drop-out rates as well as increased primary school completion rates. It is worth noting that improvements in these dimensions may contribute in the long run to enhancing 'final indicators'. In fact, inasmuch as reducing drop-out rates and school age-gaps contribute to increase permanence in school, promotion to higher educational levels is fostered. In the long run, this may improve 'final outcomes' such as total years of formal education. In addition, this work aims at contributing to the literature that explores the heterogeneity of CCTs' impact on educational results providing new insights for further adjustments of the program.

The paper is organized as follows. The next section extends on the international evidence regarding the educational impact of CCTs as well as describes the AUH program. The third section describes the data and methodology used for the analysis while the following section presents the results. Finally, section 5 concludes with some final remarks.

[1] Intra-Year Continuity Rate is defined in the following way: out of all children that attended school at the beginning of the school year, the percentage that were still doing so by the end of it. Primary School Completion Rate is defined as the percentage of children in a given age group that completed the primary education level.

2. Impact of CCT Programs on Education Results

CCT programs were designed to address simultaneously two different, yet interrelated, objectives. In the short term, monetary transfers aim at protecting the vulnerable population from economic shocks. On the long run, social promotion is pursued through human capital accumulation fostered by the conditionalities imposed (Fiszbein et al., 2009).

Therefore, educational outcomes are expected to improve as a result of CCT programs. This effect may be produced through two different channels: (i) by relaxing the budget constraints of poor families households may increase the demand for different goods and services, including education services - the 'pure income' effect; (ii) by incorporating an additional incentive to consume education (and health) through the imposition of conditionalities - the 'price' effect (Fiszbein et al., 2009).

The impact of CCTs on different educational outcomes has been extensively studied. Albeit strong differences across the findings, a broad conclusion points to a positive and significant impact on school access indicators, typically enrollment and attendance rates. The positive effects of CCTs on enrollment and attendance rates are particularly important among the poorest children, whose enrollment rates are the lowest. Effects are also large during upper high school and in the transition years (i.e. from primary to secondary school), which are two key moments in terms of dropout. The generosity of transfers is another key factor in enhancing the positive impact of programs on access indicators. Additionally, the imposition of conditionalities on school achievement beyond standard attendance conditions (e.g., school progression) is associated with higher enrollment and attendance levels (Saavedra and García, 2017). In general, impact assessments have not been able to identify which channel predominates, i.e. what part of the impact is due to a pure income effect and which part responds to the incentives introduced by conditionalities (Fiszbein et al., 2009).

Despite significant increases in enrollment and attendance among beneficiaries, there is little evidence of improvements in learning outcomes (or "final" educational outcomes) such as completed years of schooling or test scores (Saavedra and García, 2017). This suggests that in order to maximize the potential effects on human capital accumulation, CCTs should be combined with other programs that improve the quality of the supply of education services, as well as implement conditions that focus on results rather than the mere use of educational services (Fiszbein et al., 2009).[2]

In Argentina the *Asignación Universal por Hijo* (AUH) was implemented in late 2009. In general terms it was designed as a CCT program focused on children of either unemployed or informal workers earning less than the minimum wage.[3] Each beneficiary household can perceive a monthly transfer per child under 18 years old up to a maximum of five dependent children, while transfers for disabled children have no age limit. The AUH represents the largest social program in Argentina: it benefits over 3.7 million children across the country while each transfer equals almost 15% of minimum wage (ANSES,

[2] Evidence is a little more encouraging with regard to the impact of CCTs on early childhood cognitive development (Macours, Schady and Vakis, 2008). The results suggest that a very early intervention could produce larger returns than would be expected.

[3] In practice, checking this condition is not possible, which implies that informal workers earning more than the minimum wage could become beneficiaries. Nevertheless, both quantitative and qualitative evidence suggest that these situations are scarce, probably due to social responsibility or stigma (for further discussion refer to Edo, Marchionni and Garganta, 2017).

2017). Given that a typical family in the lower deciles has 3 children, the AUH may represent up to a 50% increase in household income.

The conditionalities within the program are defined in the following way. Beneficiaries receive 80% of the transfers on a monthly basis. The remaining 20% is retained each month and only transferred once a year, upon fulfillment of health controls (children under the age of 5) and school attendance (children between 5 and 18 years old). If these conditionalities are not met, not only the 20% is retained but also the beneficiary is suspended from the program.

Evidence regarding the impact of the AUH on education outcomes is scarce. Edo, Marchionni and Garganta (2017) study the effect of the program on attendance rates. By resorting to a difference-in-difference methodology based on microdata from the Argentinean National Household Survey, they find that the AUH rose secondary school attendance of eligible boys aged 15 to 17 by more than 5 percentage points. For younger children the effect they found is almost negligible (0.8 for those aged 12 to 14 and 0.4 for those aged 6 to 11) and also concentrated among boys. Other analysis point in the same direction (Paz and Golovanevsky, 2014; Cigliutti et al., 2015; and Jiménez and Jiménez, 2016). Conversely, D'Elia and Navarro (2013) find preliminary evidence that the program may have enlarged the schooling gap of the younger children (6 to 13) when comparing the years 2009 and 2010, while they find no significant impact on those aged 14 to 17.

The present work provides new evidence regarding the impact of the AUH on educational results beyond school attendance, namely intra-year continuity rates and primary school completion rates. By using micro-data and following a difference-in-difference approach we base our analysis on a relatively large period, covering 6 years before and 5 years after the AUH implementation. Furthermore, we focus on unraveling the heterogeneous effects of the AUH on different age and gender groups.

3. Data and empirical strategy

Assessing the impact of the AUH remains elusive for several reasons. In the first place, the program was not randomly assigned thus imposing severe limitations to the definition of an adequate control group. Secondly, there is no publicly available dataset containing information on the beneficiaries *before* the implementation of the program. Our strategy is thus to base the analysis on data from the *Encuesta Permanente de Hogares* (EPH), a national household survey carried out by the National Statistics Office in Argentina (INDEC). Even though this survey does not allow for identifying the actual beneficiaries of the program, it is still possible to identify potentially eligible children by checking whether the program's eligibility conditions are met. Therefore, we perform an "intention to treat" analysis.[4]

The treatment group is defined as girls and boys aged 6 to 17 years old,[5] whose parents are inactive, unemployed, informal or self-employed workers.[6] As for the control group, it includes all children 6-17 for whom at least one of their parents is employed in the formal sector. We restrict both groups to children belonging to the first four deciles so that the

[4] This is the same empirical strategy followed in Edo, Marchionni and Garganta (2017).

[5] Youth aged 18 and older are no longer eligible for the program.

[6] The Special Social Security Scheme for Domestic Service Employees (Law 25,239, Title XVIII) stated that children whose parents are registered employees working in the domestic service are also eligible for the AUH and hence are included in the treatment group.

control group remains fairly similar in terms of socio-demographic characteristics.[7] We focus on the 2004-2014 period, taking years before 2010 as the pre-intervention period, since the AUH was launched in November 2009.

We resort to a difference-in-difference methodology to estimate the intention-to-treat impact on our two results of interest: (i) intra-year continuity rates and (ii) primary school completion rates. In particular, we compare the differences in the probability of sustaining school attendance throughout the year as well as of graduating from primary school of the treatment and control groups, before and after the inception of the program. This requires two identification assumptions. On the one hand, we need to assume that there was no other contemporaneous event to the implementation of the AUH that could have caused differences in the evolution of these results between the treatment and control groups. This does not appear to be a strong assumption considering no major initiatives affecting educational outcomes took place in late 2009. The other assumption that needs to hold is that trends of both indicators (intra-year continuity rates and primary school completion rates) for the treatment and control groups would have evolved similarly in the absence of the program. Even though this assumption may not be proven, we provide evidence in its favor further on through common trends tests.

As for the difference-in-difference model, we use the standard linear specification in equation (1).

$$Education\ Outcome_i = \propto + \beta_1 Treat_i + \beta_2 After_i + \gamma(Treat_i . After_i) + \theta\, X_i + u_i \quad (1)$$

The dependent variable *Education Outcome* represents one of our two results of interest. To account for intra-year continuity, we focus on children who attended school at the beginning of the school-year (first quarter) and define the dependent variable as a binary indicator that takes the value 1 if the child still attends school by the end of the school-year, and 0 otherwise. Regarding primary school completion, we focus on children older than 12 years old, i.e. the theoretical age to finish primary school, and define the dependent variables as a binary indicator that takes the value 1 if the child completed the primary level and 0 otherwise. As for the right hand side of equation (1), *Treat* is an indicator variable identifying the treatment group; *After* tags years after the AUH implementation (2010-2014), and X includes a set of controls at the child and head of household level (child's age and squared age; head of household's gender, age, squared age, educational level and employment status) as well as other household characteristics (household size, per capita family income, single parent household, female headed household, number of children under 18). We also control for time (year and quarter) and regional fixed effects, as well as for regional trends.[8]

Assuming that the unobserved characteristics that remain after controlling for all these variables do not have a differential impact on the dependent variables across groups

[7] Eligibility also requires that parents' earnings be below the minimum legal wage, but this condition may not be verified among the informal workers. Nevertheless, qualitative and quantitative evidence suggests that middle and high-income informal workers opt out of the program due to social responsibility and stigma, and hence the inclusion error is small (Edo, Marchionni and Garganta, 2017).

[8] Evaluating the effect of the AUH on each output of interest (intra-year continuity and primary school completion rates) requires some differentiation of this common empirical strategy, driven by the nature of the data on which the analysis is based. These differences are detailed in the section that addresses each particular result.

(treatment and control) between the two periods (before and after the implementation of the AUH), we may claim that the γ parameter represents the causal effect.

4. Results

a. Intra-year Continuity Rates

To define the intra-year continuity indicator, we resort to the rotation scheme of the EPH that allows us to track the same household over a period of one year and a quarter. This means that if a household is sampled for the first time in quarter *t* (which could be any quarter along the year), it would also be surveyed in quarters *t*+1, *t*+4 and *t*+5. Since in Argentina a school year goes from March to December, tracking a child's continuity over the school year implies checking whether those who were effectively attending school at the beginning of the year (March) were still doing so by the end of it (December). Given the structure of the rotational scheme, this can only be checked for those children whose households are sampled for the first time (*t*) in the last quarter of the year: for those households we are able to check school attendance during the following year: in March (*t+1*) and in December (*t+5*).[9] Therefore, the sample we use to estimate the impact of the AUH on intra-year continuity rates is further restricted by only including children living in households that were sampled for the first time during the last quarter of the year and who attend school in the following quarter.[10] Therefore, our variable of interest, *continuity*, is a binary indicator variable that takes the value 1 if the child was attending school in *t+1* and in *t+5*¸ and it takes the value 0 if he/she was attending school in *t+1* but was not doing so in *t+5*.

Table 1 displays intra-year continuity rates in the treatment and control groups, before and after the program implementation, by age range and gender. Results are heterogeneous. For eligible children aged 6 to 11, irrespective of gender, we find no significant differences between the treatment and control group, before and after the AUH was implemented. It is important to note, however, that intra-year continuity rates were almost perfect in that age-range, even for those belonging to the first four deciles that were included in our sample. Instead, for those in the primary-secondary transition age (12 to 14 years old) intra-year continuity rates show differences between both groups when comparing them before and after the implementation of the AUH: for eligible girls at least, continuity rates rose by around 3.4 percentage points. This is certainly a positive result since intra-year continuity rates for this age-range were certainly high (around 95% for the treatment group) but not at all perfect. Eligible boys in that age-range, however, show no signs of improvement. Finally, the older children (i.e., those between 15 and 17 years old) show large differences across control and treatment groups in terms of avoiding intra-year drop-out when comparing rates before and after the implementation of the program. Continuity rates rose around 2 percentage points for eligible boys while for girls the increase is almost three times larger: 5.7 percentage points This result is encouraging given the fact that older children show the lowest intra-year continuity rates (around 80% for eligible children), consistent with the age-increasing opportunity cost of attending school. Even though

[9] Given the rotational scheme of the EPH intra-year continuity rates may be evaluated in two different ways: (i) by assessing child's attendance during the first and last quarter of the year –as presented in this paper-; (ii) by checking child's attendance in the second and third quarters (i.e., selecting households that are sampled for the first time during the second quarter of the year). Results based on (i) or (ii) do not differ significantly. We opted for presenting results based on (i) because it specifically captures child attendance over the whole school year rather than half-through it. Results using the alternative sample (ii) are available upon request.

[10] It is important to note that this implies an important reduction in the sample size.

preliminary, this evidence is indicative of a possible positive effect of the AUH in terms of intra-year continuity rates.

Table 1. Intra-year Continuity Rates

By age and gender

Boys	6 to 11			12 to 14			15 to 17		
	Control (i)	Treatment (ii)	(ii)-(i)	Control (i)	Treatment (ii)	(ii)-(i)	Control (i)	Treatment (ii)	(ii)-(i)
Before AUH	99.6	99.0	***-0.6***	97.8	94.3	***-3.5***	83.9	80.0	***-3.9***
After AUH	99.3	99.0	***-0.3***	97.3	93.7	***-3.6***	86.7	84.8	***-1.9***
Difference (After-Before)	***-0.3***	***0.0***	***0.3***	***-0.5***	***-0.7***	***-0.1***	***2.8***	***4.8***	***2.1***

Girls	6 to 11			12 to 14			15 to 17		
	Control (i)	Treatment (ii)	(ii)-(i)	Control (i)	Treatment (ii)	(ii)-(i)	Control (i)	Treatment (ii)	(ii)-(i)
Before AUH	99.5	99.4	***-0.1***	98.1	95.9	***-2.2***	91.9	84.2	***-7.7***
After AUH	99.3	98.4	***-0.9***	96.8	98.0	***1.2***	89.0	87.0	***-2.0***
Difference (After-Before)	***-0.3***	***-1.0***	***-0.7***	***-1.3***	***2.1***	***3.4***	***-2.9***	***2.8***	***5.7*****

Source: own estimations based on *Encuesta Permanente de Hogares*.
Note: the sample includes all children attending school in the first quarter of the year who belong to households interviewed for the first time during the last quarter of the previous year. Intra-year continuity takes the value of 1 if the child still attends school in the last quarter; 0 if he/she is not longer attending. *Treatment Group* includes children whose parents are either inactive, unemployed, informal or self-employed workers (or are registered employees working in the domestic service). *Control Group* includes all children for whom at least one of their parents is employed in the formal sector. *Before AUH* includes years 2004-2009 while *After AUH* includes years 2010-2014. Clustered robust standard errors in parenthesis; * p<0.10, ** p<0.05, *** p<0.01.

This preliminary evidence, however, also highlights the fact that treatment and control groups differ in initial levels. Indeed, potential beneficiaries of the AUH show systematic lower levels of intra-year continuity rates. This is not surprising given the fact that both groups are different by construction: to the extent that the program was assigned non-randomly and focused on the more vulnerable population we expect beneficiaries to show systematic differences in terms of demographic, economic and social characteristics. Table A.1 in Appendix corroborates this presumption. Indeed, regardless of age group or gender, groups differ in almost all of the included characteristics. Children in the treatment group belong to households where the head is much more probable to be a woman and/or a single parent; he or she has lower educational attainment (around 1.5 less school years) and is less likely to be employed. Furthermore, children in the treatment group generally belong to larger households with more children. Finally, as expected, potentially beneficiary children have significant less income than those that do not meet the selection criteria. All of this holds with slight variations across gender-age groups, before and after the implementation of the AUH. These differences certainly explain to some extent the gap between both groups in terms of baseline levels of intra-year continuity rates. Nevertheless, it is important to note that even if the levels were different before the implementation of the AUH the trends did not differ significantly. This is inferred from a

series of pre-program common trends tests (one for each gender-age group)[11] which suggest that there is not enough evidence to reject the null hypothesis that the pre-treatment trends were equal. This reinforces the confidence in our identification assumption.

Table 2 – Diff-in-diff Estimation Results: Linear Probability Model of Intra-Year Continuity

By age and gender

Age Range	6 to 11		12 to 14		15 to 17	
	Boys	Girls	Boys	Girls	Boys	Girls
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment*After	***0.272***	***-0.610***	***0.383***	***3.869****	***3.282***	***7.047*****
	(0.454)	***(0.720)***	***(1.634)***	***(1.837)***	***(3.837)***	***(2.560)***
Treatment	-0.745***	-0.105	-2.516*	-1.725	-2.799	-6.150**
	(0.146)	(0.543)	(1.290)	(1.298)	(2.233)	(2.252)
After	-4.240***	8.380***	6.459	1.084	-5.991	-60.38***
	(0.716)	(0.688)	(12.78)	(2.090)	(12.80)	(19.68)
Child and Head of HH characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Other HH characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Regional and Time dummies, Regional Trends	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,863	3,517	1,948	1,842	1,553	1,573

Source: own estimations based on *Encuesta Permanente de Hogares*.
Note: the sample includes all children attending school in the first quarter of the year who belong to households interviewed for the first time during the last quarter of the previous year. OLS Estimations. Dependent binary variable: *Continuity*, equals 1 if the child attended school in the first and last quarter of the year; it equals 0 for those attending school in the first quarter but not doing so in the last quarter. *Treatment* equals 1 for eligible children and 0 for non-eligible children; *After* equals 1 in the period 2010-2014 and 0 for the period 2004-2009; child´s and/or head of household´s characteristics (child's age and squared age, head of household's gender, age, squared age, educational level and employment status), other household characteristics (household size, per capita income, single parent household, female headed household, number of children under 18), region fixed effects (6 regions), time fixed effects (year and quarter) and regional time trends. Clustered robust standard errors in parenthesis; * p<0.10, ** p<0.05, *** p<0.01.

We now evaluate whether the preliminary results presented in Table 1 hold in a multivariate difference-in-difference framework and remain robust to several types of controls. Table 2 shows the results of estimating the linear model of the probability of intra-year continuity represented in equation (1). The estimations are done separately for each age-range and gender, and include the whole set of controls described in the previous section.[12] Results are, once again, heterogeneous. In particular, it seems that for those

[11] We run a model of our outcome of interest (intra-year continuity rates) on a constant, the treatment dummy, year dummies and the interactions between these latter variables including only pre-intervention years. We then apply an *F* test in which the null hypothesis (*Ho*) states that all the coefficients for the interaction terms are jointly equal to zero. This is repeated for each gender-age group. We find no evidence to reject the null in any of the test. The p-values associated to the F-Statistics are displayed in Table A.2 in the appendix.

[12] The results presented in Table 2 are robust to the inclusion of different subsets of these controls. Results are available upon request.

eligible children aged 6 to 11 the AUH has not had any effect on intra-year continuity (columns (1) and (2)). Furthermore, it seems that for eligible boys of all age-ranges the AUH has not been able to improve intra-year continuity rates (columns (1), (3) and (5)). Even though for those boys aged 15 to 17 years old the coefficient is positive and relevant in magnitude, it is not statistically significant (column (5)).

Girls, however, show clear signs of having benefitted from the program: our results suggest that the AUH had a positive effect in terms of preventing girls from dropping out of school during the school year. Indeed, for eligible girls aged 12 to 14, the program may be held responsible for increasing intra-year continuity rates by almost 4 percentage points (column (4)). Most strikingly, for the eligible eldest girls this impact almost doubles, increasing to 7 percentage points (column (6)). Still, it is also worth noting that we find no effect among the youngest girls: for those aged 6 to 11 the coefficient is virtually zero.

Placebo Experiments

We perform a series of false experiments or placebo exercises on those groups for which we claim the AUH may be held responsible of increasing their intra-year continuity rates, that is, girls between 12-14 and 15-17 years old. The results provide evidence that allows for gaining more confidence in the validity of the identification assumption. The experiments consist of running the same linear probability model using only pre-treatment observations and pretending that the program took place in any year previous to 2009 – the actual implementation date of the AUH. Table 3 shows the results for five alternative fake dates: 2004, 2005, 2006, 2007 and 2008. In all cases the coefficient accompanying the interaction term is not statistically significant. This evidence suggests that it was only after 2009 that some event shifted the intra-year continuity rates of eligible girls between 12 and 17 years old, but clearly not before.

Table 3. Diff-in-diff Estimation Results: Linear Probability Model of Intra-year Continuity

Placebo Experiments

	Girls 12 to 14					Girls 15 to 17				
	Intervention in					Intervention in				
	2004	2005	2006	2007	2008	2004	2005	2006	2007	2008
Treatment*After	-1.947	-0.223	-1.717	-4.023	-0.854	-3.680	2.696	2.560	4.953	6.922
	(1.414)	(2.654)	(2.261)	(3.070)	(3.009)	(2.499)	(4.205)	(3.781)	(4.313)	(5.543)
Child and HH head's characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other HH Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional and Time Dummies, Regional Trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	938	938	938	938	938	777	777	777	777	777

Source: own estimations based on *Encuesta Permanente de Hogares*.
Note: the sample includes all children attending school in the first quarter of the year who belong to households interviewed for the first time during the last quarter of the previous year. OLS estimations. Dependent binary variable: *Continuity*, equals 1 if the child attended school in the first and last quarter of the year; it equals 0 for those attending school in the first quarter but not doing so in the last quarter; *Treatment* equals 1 for eligible children and 0 for non-eligible children; *After* is defined ad-hoc for each year (for example in 2006 it equals 0 in the period 2004 to 2006 and 1 in the period 2007-2009). For a description of control variables included, refer to Table 2. OLS estimations. Clustered robust standard errors in parenthesis; * p<0.10, ** p<0.05, *** p<0.01.

b. Primary School Completion Rates

Estimating the effect of the AUH on primary completion rates requires observing whether a child has finished that school level, provided he or she is old enough to have been able to do so (12 years at least).[13] This implies observing in each year the proportion of children of a certain age that graduated from primary school. We therefore do not need to resort to the rotation scheme of the EPH in this case. As a consequence, the sample size expands considerably.

Table 4 shows primary school completion rates for the treatment and control groups, before and after the program implementation. Once again, results differ by age and gender. For both eligible boys and girls aged 12 through 14 we find mild differences with their respective control groups when comparing completion rates before and after the implementation of the AUH: around 1 percentage point increase for boys and almost double (2.1 percentage points) for girls. Regarding the eldest children (15 through 17 years old), eligible boys' primary completion rates seem to increase by around 2 percentage points, almost twice the rise for younger boys. For girls in that age range there is an increase but its size is negligible. It is important to note, nonetheless, that graduating from primary school within this age range (15-17) implies a certain delay in the child's school trajectory: the theoretical age for having finished the primary level is around 12 years old. These results, although certainly preliminary, indicate a positive effect that may be attributed to the AUH.

Table 4. Primary School Completion Rates.

By age and gender

Boys	12 to 14			15 to 17		
	Control (i)	Treatment (ii)	(ii)-(i)	Control (i)	Treatment (ii)	(ii)-(i)
Before AUH	65.4	56.7	-8.7	93.7	87.3	***-6.4***
After AUH	77.9	70.3	-7.7	96.4	91.8	***-4.6***
Difference (After-Before)	***12.6***	***13.6***	***1.1***	***2.7***	***4.5***	***1.9****

Girls	12 to 14			15 to 17		
	Control (i)	Treatment (ii)	(ii)-(i)	Control (i)	Treatment (ii)	(ii)-(i)
Before AUH	71.8	64.0	-7.8	96.2	93.1	***-3.1***
After AUH	81.5	75.7	-5.8	97.8	94.9	***-2.9***
Difference (After-Before)	***9.7***	***11.7***	***2.1***	***1.6***	***1.9***	***0.2***

Source: own estimations based on *Encuesta Permanente de Hogares*.
Note: the sample includes all children aged 12 to 17. *Completion* takes the value of 1 if he/she reports to have completed primary school; 0 otherwise. *Treatment Group* includes children whose parents are either inactive, unemployed, informal or self-employed workers (or are registered employees working in the domestic service). *Control Group* includes all children for whom at least one of their parents is employed in the formal sector. *Before AUH* includes years 2004-2009 while *After AUH* includes years 2010-2015. Clustered robust standard errors in parenthesis; * p<0.10, ** p<0.05, *** p<0.01.

[13] In Argentina, primary school starts at the age of 6 and consists of 6 or 7 years of schooling, depending on the district (province). This implies that by the age of 12 children are expected to have graduated from that level.

As it was the case with intra-year continuity rates, primary school graduation rates also show systematic differences in the initial levels, in favor of children belonging to the control group. As stated before, this is a corollary of the non-random assignment of the program and its focus on the most vulnerable population. Indeed, children belonging to the treatment and control group differ not only in educational characteristics but in many other demographic and social dimensions. Table A.3 in the Appendix reveals a very similar panorama to the one presented for the sample on which the intra-year continuity rates analysis was based. In essence, children belonging to the treatment group are more likely to live in single parent households, where the head is frequently a woman, he or she is more likely to have less educational attainment and to be unemployed. Furthermore, families are usually larger and rely on significantly less per capita income. Once again, however, even though these differences have an impact on the primary school graduation levels of both groups, before the AUH implementation trends do not seem to differ across groups. This is confirmed by a series of pre-treatment common trends tests which provide no evidence to reject the null hypothesis that trends in primary school graduation rates differed across the treatment and control groups before the AUH.[14] This holds for all age-gender groups.

Table 5. Diff-in-diff Estimation Results: Linear Model of the Probability of Graduating from Primary School

By age and gender

Age Range	12 to 14		15 to 17	
	Boys	Girls	Boys	Girls
	(1)	(2)	(3)	(4)
Treatment*After	***1.371** (0.674)***	***2.836** (1.137)***	***2.055***** (0.443)***	***0.563 (0.562)***
Treatment	-4.634*** (0.780)	-4.304** (1.182)	-3.852*** (0.435)	-1.682*** (0.251)
After	-0.126 (0.516)	5.679*** (0.675)	-2.650*** (0.300)	-0.638 (0.491)
Child and Head of HH characteristics	Yes	Yes	Yes	Yes
Other HH characteristics	Yes	Yes	Yes	Yes
Regional and Time dummies, Regional Trends	Yes	Yes	Yes	Yes
Observations	47,580	45,900	45,652	43,622

Source: own estimations based on *Encuesta Permanente de Hogares*.
Note: the sample includes all children aged 12 to 17. OLS estimations. Dependent binary variable: *Completion*, equals 1 if the child graduated from primary school and 0 otherwise. *Treatment* equals 1 for eligible children and 0 for non-eligible children; *After* equals 1 in the period 2010-2015 and 0 for the period 2004-2009; child´s and/or head of household´s characteristics (child's age and squared age, head of household's gender, age, squared age, educational level and employment status), other household characteristics (household size, per capita income, single parent household, female headed household, number of children under 18), region fixed effects (6 regions), time fixed effects (year and quarter) and regional time trends. Clustered robust standard errors in parenthesis; * p<0.10, ** p<0.05, *** p<0.01.

[14] We run a model of our outcome of interest (primary school graduation rates) on a constant, the treatment dummy, year dummies and the interactions between these latter variables including only pre-intervention years. We then apply an *F* test in which the null hypothesis (*Ho*) states that all the coefficients for the interaction terms are jointly equal to zero. This is repeated for each gender-age group. We find no evidence to reject the null in any of the test. The p-values associated to the F-Statistics are displayed in Table A.4 in the appendix.

We now evaluate whether the preliminary results presented in Table 4 hold in a multivariate difference-in-difference framework and remain robust to several types of controls. Table 5 shows the results of estimating the linear model of the probability of graduating from primary school displayed in equation (1). The estimations are done separately for each age-range and gender and include the same large set of controls described in the previous section.[15] Results show that, even though in general terms the AUH seems to have had a positive effect on the probability that an eligible child finishes primary school, the magnitude of this impact varies with age and gender.

For eligible children aged 12 through 14, the effect is present for both boys and girls. Nonetheless, the impact is larger for eligible girls than for boys: the AUH may be held responsible for an increase of almost 3 percentage points for the former (column (2)) while this effect is less than half for the latter (1.4 percentage points, column (1)). Regarding children aged 15 to 17, the AUH seems to have only affected the probability of graduating from primary school of eligible boys by 2 percentage points (column (3)). Instead, for girls aged 15 to 17 there is a positive but negligible and not statistically significant impact (column (4)).

Placebo Experiments

We carry out the same placebo experiments described for the intra-year continuity rates in order to gain confidence in the validity of the identification assumption. We focus on those groups for which we claim the AUH may be held responsible of increasing their primary school completion rates: eligible boys and girls between 12-14 and only boys aged 15 through 17 years old. Results are displayed in Table 6: in all cases the coefficient accompanying the interaction term is not statistically significant. Once again, the evidence suggests that it was only after 2009 that some event shifted the primary school completion rates of eligible girls between 12 and 14 years old and eligible boys aged 15 through 17, but clearly not before.

Table 6. Diff-in-diff Estimation Results: Linear Model of the Probability of Graduating from Primary School

Placebo Experiments

	Boys 12 to 14					Girls 12 to 14					Boys 15 to 17				
	Intervention in					Intervention in					Intervention in				
	2004	2005	2006	2007	2008	2004	2005	2006	2007	2008	2004	2005	2006	2007	2008
Treatment*After	1.536	0.614	0.990	1.710	2.046	2.022	0.459	1.013	0.441	0.856	-0.801	0.705	1.095	0.229	1.544
	(2.225)	(1.523)	(1.767)	(1.572)	(1.045)	(1.318)	(1.176)	(1.116)	(1.087)	(1.179)	(1.455)	(1.325)	(1.127)	(0.605)	(1.160)
Child and HH head's characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other HH Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional and Time Dummies, Regional Trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	24,765	24,765	24,765	24,765	24,765	23,767	23,767	23,767	23,767	23,767	23,018	23,018	23,018	23,018	23,018

Source: own estimations based on *Encuesta Permanente de Hogares*.
Note*:* the sample includes all children aged 12 to 17. OLS Estimations. Dependent binary variable: *Completion*, equals 1 if the child graduated from primary school and 0 otherwise. *Treatment* equals 1 for eligible children and 0 for non-eligible children; *Treatment* equals 1 for eligible children and 0 for non-eligible children; *After* is defined ad-hoc for each year (for example in 2006 it equals 0 in the period 2004 to 2006 and 1 in the period 2007-2009). For a description of control variables included, refer to Table 5. Clustered robust standard errors in parenthesis; * p<0.10, ** p<0.05, *** p<0.01.

[15] The results presented in Table 5 are robust to the inclusion of different subsets of these controls. Results are available upon request.

5. Concluding remarks

Increasing human capital accumulation in order to reduce the intergenerational transmission of poverty is one of the core aims of CCTs. This ambitious goal was embodied in the very design of these programs through the establishment of conditionalities that ensure full payment of the transfers only upon fulfillment of certain health and educational requirements. In terms of educational results, international evidence indicates that CCTs have been relatively successful in improving 'access' indicators (typically enrollment and attendance rates) while evidence of a positive impact on 'final' indicators, such as completed years of schooling or test scores, is still scarce. In Argentina, the AUH – a massive conditional cash transfer program - was launched in late 2009. The program is focused on children under 18 years old whose parents are either inactive, unemployed or work in the informal sector. 80% of the transfer is paid monthly while the remaining 20% is paid annually upon the fulfillment of certain health and educational requirements. The latter imply certifying school attendance for all compulsory levels (primary, secondary and the last year of the initial level).

Regarding educational results, Edo, Marchionni and Garganta (2017) show that the AUH may be held responsible for increasing the probability of school attendance of eligible children. This effect is mainly concentrated to children aged 15 through 17 and restricted to boys: for this particular group, the AUH may be held responsible for increasing the probability of attendance by 5 p.p. For younger children the impact is almost negligible: 0.4 p.p. for children 6 to 11 and 0.8 for children 12 to 14. Once again, the effect is only present among boys: the AUH does not seem to have had improved girls attendance rates for any age-group.

Following a very similar methodology based on a difference-in-difference analysis, in this paper we find that the AUH may be held responsible for positive impacts on educational results beyond school attendance, for groups other than those aged 15 to 17 and for girls as well as for boys. In particular, the AUH seems to have had a positive and statistically significant impact on reducing intra-year dropout of eligible children. This effect is concentrated on girls aged 12 through 17: we estimate an increase of almost 4 percentage points in intra-year continuity rates among girls aged 12 through 14 and more than 7 percentage points for those in the 15-17 age range. The AUH may also be held responsible of increasing primary school completion rates of both boys and girls. We estimate an improvement in the probability of graduating from primary school of 1.4 percentage points for eligible boys aged 12 to 14, 2 percentage points for those in the 15-17 age group, and almost 3 percentage points for eligible girls between 12 and 14 years old.

Analyzing these results in light of previous work (Edo, Marchionni and Garganta, 2017) depicts a fairly consistent panorama of the AUH's impact on educational results. In the first place, it seems the program is not affecting any educational outcomes of those aged between 6 and 11 years old: while attendance rates show a negligible positive impact concentrated on boys, no results at all were found for intra-year continuity rates of neither boys or girls in that age group. Although this is clearly related to the very high baseline rates of both indicators, it is also indicative of the fact that the AUH may not be enough to attract those very vulnerable children that still remain out of the educational system. Secondly, for those aged 12-17 the AUH does seem to affect educational outcomes. Regarding girls, even though the AUH does not seem to be enough to attract the most vulnerable who are still outside the educational system, it is contributing to improve the educational trajectories of those who attend school, reducing intra-year dropout and increasing the chances of completing primary school at a closer age to the theoretical upper limit. As for boys, the AUH does not seem to be able to increase intra-year

continuity rates while it may have produced a mild improvement of their primary completion rates, which is larger for those aged 15 to 17. This is consistent with previous finding regarding an increase in school attendance rates of boys.

Further research should focus on two different directions. On the one hand, it is important to understand the determinants of these heterogeneous outcomes across genders. Even though some of them may be explained through differences in the baseline level of the indicators (attendance and primary school completion rates) the intra-year continuity rates showed rather similar levels for both girls and boys in the pre-intervention period and yet only the former benefitted from the AUH. On the other hand, efforts should be directed to assess which complementary policies could be implemented so as to attract to –or maintain in- school children of all age-ranges that are currently out of the educational system. For these groups, the AUH has proven to be insufficient. This surely requires a much greater and focused effort, with policies that complement monetary transfers with other accompanying measures and support for children and their families. Exploring these issues would certainly yield benefits in terms of further adjustments of the AUH.

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Appendix

Table A.1. Descriptive Statistics – Sample used in the estimation of Intra-year continuity

		6 to 11 - Boys							
		Before				After			
		Treatment group	Control group	Difference	P-value	Treatment group	Control group	Difference	P-value
Child	**Age**	8.5	8.7	-0.2	0.1	8.6	8.5	0.1	0.3
Head of HH	**Age**	41.0	42.1	-1.0	0.1	42.0	41.3	0.7	0.2
	Female head (%)	41.8	17.6	24.2	0.0	39.2	22.6	16.6	0.0
	Single parent (%)	36.2	13.9	22.2	0.0	32.6	16.5	16.1	0.0
	Education (Years)	7.9	9.3	-1.4	0.0	8.5	9.9	-1.5	0.0
	Employed (%)	72.9	90.4	-17.5	0.0	70.2	88.3	-18.1	0.0
HH	**HH Size**	6.0	5.9	0.1	0.6	5.9	5.6	0.3	0.0
	Number of Children	3.5	3.4	0.2	0.0	3.3	3.0	0.3	0.0
	Per Capita Income ($)	167.7	279.0	-111.3	0.0	583.3	838.2	-254.8	0.0
	Observations	*1297*	*717*			*1116*	*733*		

		6 to 11 - Girls							
		Before				After			
		Treatment group	Control group	Difference	P-value	Treatment group	Control group	Difference	P-value
Child	**Age**	8.6	8.5	0.1	0.4	8.5	8.6	-0.1	0.2
Head of HH	**Age**	41.3	41.1	0.2	0.7	42.1	41.8	0.3	0.6
	Female head (%)	42.1	17.8	24.3	0.0	40.8	22.4	18.4	0.0
	Single parent (%)	34.4	14.4	20.0	0.0	33.0	16.3	16.6	0.0
	Education (Low-High)	7.9	9.5	-1.5	0.0	8.3	10.0	-1.7	0.0
	Employed (%)	72.4	90.5	-18.1	0.0	72.0	88.3	-16.2	0.0
HH	**HH Size**	6.1	6.0	0.1	0.3	5.8	5.7	0.1	0.5
	Number of Children	3.6	3.4	0.2	0.1	3.2	3.1	0.1	0.2
	Per Capita Income ($)	163.5	266.4	-103.0	0.0	590.8	898.2	-307.4	0.0
	Observations	*1188*	*652*			*1004*	*673*		

		12 to 14 - Boys							
		Before				After			
		Treatment group	Control group	Difference	P-value	Treatment group	Control group	Difference	P-value
	Age	13.0	12.9	0.0	0.7	13.0	13.0	0.0	0.7
Head of HH	**Age**	44.9	43.1	1.8	0.0	44.5	43.6	0.9	0.2
	Female head (%)	40.3	15.7	24.7	0.0	42.1	24.7	17.5	0.0
	Single parent (%)	37.4	13.8	23.6	0.0	37.1	16.9	20.2	0.0
	Education (Years)	7.9	9.1	-1.3	0.0	8.4	9.8	-1.3	0.0
	Employed (%)	74.1	91.6	-17.5	0.0	70.3	87.4	-17.1	0.0
HH	**HH Size**	6.1	6.1	0.0	0.9	5.9	5.7	0.2	0.2
	Number of Children	3.5	3.5	0.0	0.7	3.3	3.1	0.2	0.1
	Per Capita Income ($)	175.7	271.1	-95.4	0.0	610.5	876.2	-265.7	0.0
	Observations	*652*	*370*			*553*	*373*		

Table A.1 (continued). Descriptive Statistics - Sample used in the estimation of Intra-year continuity

		12 to 14 - Girls							
		Before				After			
		Treatment group	Control group	Difference	P-value	Treatment group	Control group	Difference	P-value
Child	**Age**	13.0	13.0	0.0	0.9	13.0	13.0	0.0	0.9
Head of HH	**Age**	44.0	44.1	-0.1	0.9	44.6	43.8	0.8	0.2
	Female head (%)	44.0	16.5	27.5	0.0	41.6	26.0	15.6	0.0
	Single parent (%)	37.5	12.7	24.8	0.0	38.0	19.1	18.9	0.0
	Education (Years)	8.0	9.0	-1.1	0.0	8.2	9.9	-1.8	0.0
	Employed (%)	73.5	91.6	-18.1	0.0	74.0	88.7	-14.7	0.0
HH	**HH Size**	6.1	6.2	-0.1	0.5	6.0	5.7	0.3	0.0
	Number of Children	3.5	3.4	0.1	0.4	3.4	3.1	0.3	0.0
	Per Capita Income ($)	169.6	264.5	-94.9	0.0	583.2	862.2	-279.1	0.0
	Observations	*616*	*322*			*558*	*346*		

		15 to 17 Boys							
		Before				After			
		Treatment group	Control group	Difference	P-value	Treatment group	Control group	Difference	P-value
	Age	15.9	15.9	0.0	0.8	16.0	16.0	0.0	0.6
Head of HH	**Age**	46.9	45.5	1.4	0.0	47.4	45.6	1.8	0.0
	Female head (%)	39.3	22.4	17.0	0.0	41.0	24.0	17.0	0.0
	Single parent (%)	38.3	20.2	18.1	0.0	39.1	19.5	19.6	0.0
	Education (Years)	8.2	9.2	-0.9	0.0	8.6	10.0	-0.9	0.0
	Employed (%)	75.2	93.4	-18.2	0.0	71.6	90.6	-19.0	0.0
HH	**HH Size**	5.7	5.9	-0.2	0.2	5.6	5.7	-0.1	0.3
	Number of Children	3.1	3.1	0.0	1.0	2.9	2.9	0.0	0.8
	Per Capita Income ($)	200.2	277.4	-77.2	0.0	670.4	882.7	-212.4	0.0
	Observations	*460*	*317*			*468*	*308*		

		15 to 17 Girls							
		Before				After			
		Treatment group	Control group	Difference	P-value	Treatment group	Control group	Difference	P-value
Child	**Age**	15.9	15.9	0.0	0.6	15.9	15.9	0.0	0.8
Head of HH	**Age**	46.8	45.7	1.1	0.1	46.0	45.2	0.8	0.3
	Female head (%)	40.1	21.8	18.3	0.0	46.7	26.0	20.7	0.0
	Single parent (%)	36.4	18.8	17.5	0.0	41.8	19.9	21.9	0.0
	Education (Years)	8.3	9.7	-1.3	0.0	8.6	9.4	-0.8	0.0
	Employed (%)	74.1	93.4	-19.2	0.0	68.0	90.2	-22.2	0.0
HH	**HH Size**	5.7	6.1	-0.3	0.0	5.7	5.7	0.0	0.9
	Number of Children	3.1	3.2	-0.1	0.3	3.0	3.0	0.0	0.8
	Per Capita Income ($)	196.2	283.4	-87.2	0.0	639.5	886.7	-247.1	0.0
	Observations	*506*	*271*			*469*	*327*		

Source: own estimations based on *Encuesta Permanente de Hogares*.
Note: the sample includes all children attending school in the first quarter of the year who belong to households interviewed for the first time during the last quarter of the previous year. *Treatment Group* includes children whose parents are either inactive, unemployed, informal or self-employed workers (or are registered employees working in the domestic service). *Control Group* includes all children for whom at least one of their parents is employed in the formal sector. *Before AUH* includes years 2004-2009 while *After AUH* includes years 2010-2014. *Number of Children* is the total number of children under 18 living in the household. *HH* stands for household.

Table A.2 Pre-Treatment Common Trends Tests. P-values associated to the F-Statistic

Intra-year continuity Rates

	6 to 11	12 to 14	15 to 17
Boys	0.7362	0.4112	0.7287
Girls	0.5312	0.4091	0.9548

Source: own estimations based on *Encuesta Permanente de Hogares*.
Note: P-Values associated to the F-Statistic of running a model of our outcome of interest (intra-year continuity rates) on a constant, the treatment dummy, year dummies and the interactions between these latter variables including only pre-intervention years. We then apply an F test in which the null hypothesis (Ho) states that all the coefficients for the interaction terms are jointly equal to zero. This is repeated for each age-gender group.

Table A.2. Descriptive Statistics - Sample used in the estimation of Primary School Completion

		12 to 14 Boys							
		Before				After			
		Treatment group	Control group	Difference	P-value	Treatment group	Control group	Difference	P-value
Child	Age	13.5	13.5	0.0	0.3	13.5	13.4	0.0	0.0
Head of HH	Age	45.0	44.3	0.7	0.0	45.0	44.5	0.5	0.0
	Female head (%)	37.8	18.1	19.7	0.0	43.3	23.4	19.9	0.0
	Single parent (%)	35.7	14.5	21.2	0.0	38.5	17.5	21.0	0.0
	Education (Years)	7.8	9.3	-1.5	0.0	8.3	9.9	-1.5	0.0
	Employed (%)	72.8	89.7	-16.9	0.0	70.4	88.0	-17.6	0.0
HH	HH Size	6.1	6.0	0.1	0.0	5.8	5.7	0.1	0.0
	Number of Children	3.6	3.4	0.2	0.0	3.3	3.1	0.3	0.0
	Per Capita Income ($)	180.7	297.6	-117.0	0.0	780.1	1151.0	-371.0	0.0
	Observations	*16082*	*8683*			*13727*	*9088*		

		12 to 14 - Girls							
		Before				After			
		Treatment group	Control group	Difference	P-value	Treatment group	Control group	Difference	P-value
	Age	13.5	13.5	0.0	0.8	13.5	13.5	0.0	0.7
Head of HH	Age	44.9	44.2	0.7	0.0	45.2	44.3	0.8	0.0
	Female head (%)	39.5	19.0	20.5	0.0	44.0	24.8	19.2	0.0
	Single parent (%)	36.3	16.4	19.9	0.0	38.9	17.7	21.2	0.0
	Education (Years)	7.7	9.3	-1.5	0.0	8.3	9.9	-1.6	0.0
	Employed (%)	73.2	90.0	-16.8	0.0	69.7	87.5	-17.8	0.0
HH	HH Size	6.1	6.0	0.1	0.0	5.9	5.7	0.1	0.0
	Number of Children	3.6	3.4	0.2	0.0	3.4	3.1	0.2	0.0
	Per Capita Income ($)	180.0	296.9	-116.9	0.0	781.4	1145.7	-364.3	0.0
		15591	*8176*			*13271*	*8862*		

		15 to 17 - Boys							
		Before				After			
	Age	16.5	16.4	0.0	0.1	16.4	16.4	0.0	0.2
Head of HH	Age	47.5	46.3	1.2	0.0	47.4	46.4	0.9	0.0
	Female head (%)	39.4	19.3	20.1	0.0	44.6	25.2	19.4	0.0
	Single parent (%)	38.1	15.8	22.3	0.0	40.4	19.9	20.5	0.0
	Education (Years)	7.7	9.2	-1.5	0.0	8.2	9.8	-1.6	0.0
	Employed (%)	69.7	90.5	-20.8	0.0	67.8	88.4	-20.5	0.0
HH	HH Size	6.0	6.0	0.0	0.1	5.8	5.7	0.1	0.1
	Number of Children	3.3	3.2	0.1	0.0	3.1	3.0	0.2	0.0
	Per Capita Income ($)	198.9	308.2	-109.4	0.0	832.9	1174.6	-341.7	0.0
		15072	*7946*			*13922*	*8712*		

		15 to 17 - Girls							
		Before				After			
		Treatment group	Control group	Difference	P-value	Treatment group	Control group	Difference	P-value
	Age	16.4	16.4	0.0	0.9	16.4	16.4	0.0	0.3
Head of HH	Age	47.3	46.2	1.1	0.0	47.2	46.3	0.8	0.0
	Female head (%)	39.9	20.7	19.2	0.0	44.7	26.1	18.6	0.0
	Single parent (%)	37.7	17.8	19.9	0.0	41.5	20.2	21.4	0.0
	Education (Years)	7.9	9.3	-1.4	0.0	8.3	9.8	-1.5	0.0
	Employed (%)	72.2	90.5	-18.3	0.0	69.2	89.1	-19.9	0.0
HH	HH Size	6.0	6.0	0.0	0.9	5.9	5.8	0.1	0.0
	Number of Children	3.3	3.2	0.1	0.0	3.2	3.0	0.2	0.0
	Per Capita Income ($)	196.3	303.7	-107.3	0.0	811.4	1171.8	-360.4	0.0
		14738	*7481*			*13065*	*8338*		

Source: own estimations based on *Encuesta Permanente de Hogares*.
Note: *Treatment Group* includes children whose parents are either inactive, unemployed, informal or self-employed workers (or are registered employees working in the domestic service). *Control Group* includes all children for whom at least one of their parents is employed in the formal sector. *Before AUH* includes years 2004-2009 while *After AUH* includes years 2010-2014. *Number of Children* is the total number of children under 18 living in the household. *HH* stands for household.

Table A.4 Pre-Treatment Common Trends Tests. P-values associated to the F-Statistic

Primary School Graduation Rates

	12 to 14	15 to 17
Boys	0.3983	0.3488
Girls	0.5555	0.5617

Source: own estimations based on *Encuesta Permanente de Hogares*.
Note: P-Values associated to the F-Statistic of running a model of our outcome of interest (primary school graduation rates) on a constant, the treatment dummy, year dummies and the interactions between these latter variables including only pre-intervention years. We then apply an F test in which the null hypothesis (Ho) states that all the coefficients for the interaction terms are jointly equal to zero. This is repeated for each age-gender group.